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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR                | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 10/537,877      | 06/07/2005  | Gillian Antoinette Mimmagh-Kelleher | NI 021259           | 8406             |

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PHILIPS INTELLECTUAL PROPERTY & STANDARDS  
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EXAMINER

SHAH, SAMIR M

| ART UNIT | PAPER NUMBER |
|----------|--------------|
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2856

DATE MAILED: 04/20/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/537,877

Applicant(s)

MIMNAGH-KELLEHER ET AL.

Examiner

Samir M. Shah

Art Unit

2856

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 13 February 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-9 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-9 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Specification***

1. The disclosure is objected to because of the following informalities:

On page 2, lines 30 and 31, delete "external hose system" and replace it with -- external host system --.

Appropriate correction is required.

### ***Claim Objections***

2. Claims 4, 5, 7 and 8 are objected to because of the following informalities:

As to claims 4 and 8, it is suggested that the symbol used to denote the magnitude of the resultant vector should be changed to --  $|a|$  -- (4<sup>th</sup> line of claims 4 and 6).

As to claim 5, it is suggested that "a" should be deleted and replaced with  $|a|$  (last line of the claim).

As to claim 7, add -- the -- before "sensor signals" (4<sup>th</sup> line of the claim) for proper antecedent basis.

As to claim 8, add -- is calculated -- after "resultant vector" (2<sup>nd</sup> line of the claim).

Appropriate correction is required.

### ***Claim Rejections - 35 USC § 102***

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

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4. Claims 1, 2, 4 and 6-9 are rejected under 35 U.S.C. 102(b) as being anticipated by Hutchings et al. (US Patent 6,122,960 henceforth "Hutch").

As to claims 1 and 2, Hutch discloses a system for measuring movement of objects including a measurement unit (49) with a plurality of motion sensors/accelerometers operable to produce respective sensor signals indicative of motion/acceleration experienced thereby (column 27, lines 13-20); a processor (52)/microprocessor (56) operable to receive the sensor signals from the measurement unit and to process the sensor signals (measure a distance traversed and the speed of said object) in accordance with a predetermined method (column 24, lines 16-22; column 25, lines 60-61; column 27, lines 29-37), characterized in that the processor (52)/microprocessor (56) is operable to process the sensor/accelerometer signals as respective vector components to produce a resultant vector (figures 3-5 and 8-14; column 9, lines 17-64; column 10, lines 54-61; equations 23 and 32).

As to claim 4, Hutch discloses that the processor (52)/microprocessor (56) is operable to calculate the magnitude of the resultant vector according to the following expression:  $|a|$  (or  $|g|$ ) =  $\sqrt{a_x^2 + a_y^2 + a_z^2}$ , where  $|a|$  (or  $|g|$ ) is the magnitude of the resultant vector,  $a_x$ ,  $a_y$  and  $a_z$  are respective sensor signals (column 15, lines 22-30; equation 25).

As to claim 6, Hutch discloses that the processor (52)/microprocessor (56) is operable to calculate the direction of the resultant vector (column 9, lines 28-32; figure 3).

As to claim 7, Hutch discloses a method for measuring motion characteristics of a moving object including a plurality of motion sensors/accelerometers which are operable to produce respective sensor/acceleration signals indicative of motion experienced thereby (column 28, lines 30-35); a processor (52)/microprocessor (56) receiving the sensor/acceleration signals and processing the signals in accordance with a predetermined method (measuring a distance traversed and the speed of an object) (column 24, lines 16-22; column 25, lines 60-61; column 27, lines 29-37), characterized in that the sensor/accelerometer signals are processed as respective vector components to produce a resultant vector (figures 3-5 and 8-14; column 9, lines 17-64; column 10, lines 54-61; equations 23 and 32).

As to claim 8, Hutch discloses that the magnitude of the resultant vector is calculated according to the following expression:  $|a|$  (or  $|g|$ ) =  $\sqrt{a_x^2 + a_y^2 + a_z^2}$ , where  $|a|$  (or  $|g|$ ) is the magnitude of the resultant vector,  $a_x$ ,  $a_y$  and  $a_z$  are respective sensor signals (column 15, lines 22-30; equation 25).

As to claim 9, Hutch discloses calculating and storing the direction of the resultant vector (column 19, lines 20-27; column 20, lines 1-20).

### ***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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6. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

7. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hutch as applied to claim 1 above, and further in view of Pianca et al. (US Patent 6,466,821 B1 henceforth "Pianca").

As to claim 3, Hutch fails to disclose that the motion sensors/accelerometers are arranged to be mutually orthogonal.

Pianca teaches multi-axis DC accelerometers consisting of at least two accelerometers/sensors mounted essentially orthogonal to each other (column 5, lines 24-27).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Hutch's apparatus to include motion sensors that are arranged to be mutually orthogonal as taught by Pianca because this would allow additional measurements to be made in orthogonal directions.

8. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hutch as applied to claim 1 above, and further in view of Nikolic et al. (US Patent 6,436,052 B1 henceforth "Nikolic").

As to claim 5, Hutch fails to disclose that values of |a| are stored in a lookup table.

Nikolic teaches a "method and system for sensing activity and measuring work performed by an individual" including accelerometer data being stored on a storage device (25), which can be done by employing a look-up table (column 6, lines 50-51; column 7, lines 20-30).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Hutch's apparatus to include storing values of |a|, in a lookup table, as suggested by Nikolic because this would enable a later access of these values for further calculations.

### ***Conclusion***

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

"A continuous patient activity monitor: validation and relation to disability", D J Walker, P S Heslop C J Plummer, T Essex and S Chandler.

US Patent 6,160,478 to Jacobsen et al.

US Patent 6,077,236 to Cunningham.

US Patent 5,573,013 to Conlan.

US Patent Application Publication 2002/0109600 A1 to Mault et al.

US Patent 5,807,283 to Ng.

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10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Samir M. Shah whose telephone number is (571) 272-2671. The examiner can normally be reached on Monday-Friday 9:00 am to 5:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hezron Williams can be reached on (571) 272-2208. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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SMS  
4/7/2006

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